



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,847	08/25/2006	Kyuhei Kitao	3273-0227PUS1	3804
2292 7590 01/29/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER ARNBERG, MEGAN C	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			01/29/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/590,847

Applicant(s)

KITAO ET AL.

Examiner

Megan Arnberg

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/25/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 10-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 08/25/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 4-6 and 10-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-6 and 10-20 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 3, and 7, parentheses around the sections after formulas (I), (III), and (I) should be removed. It is unclear if the text enclosed in the parentheses is part of the claims or omitted from the claims and there as an aside.

In claim 7 it appears there is a word missing after the word "thereby" and before "the" in the last line on page 66. For the purpose of further examination, it is considered to be "obtain".

Claim 9 recites the limitation "above general formula (III)" in the forth line of the claim. There is insufficient antecedent basis for this limitation in the claim or in the

Art Unit: 1796

claims from which it depends. For the purpose of further examination, it is taken to be the structure of general formula (III) shown in claim 3. However, the correction is required to include this structure in claim 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

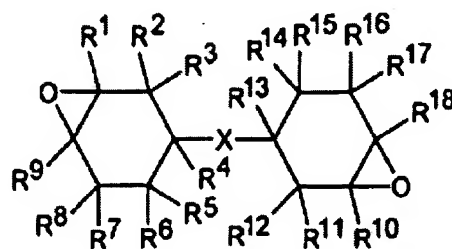
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being obvious over Takai (US 2004/0242839).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).



Regarding claims 1-3: '839 teaches

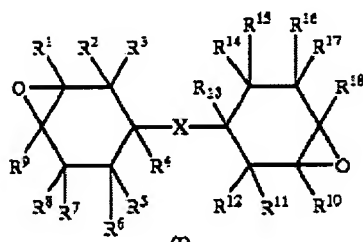
wherein X

is a divalent group selected from the group consisting of an oxygen atom, a sulfur atom, -SO-, -SO₂-, -CH₂-, -C(CH₃)₂-, -CBr₂-, -(CBr₃)₂-, and -C(CF₃)₂-; R¹ to R¹⁸ each may be identical or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have a substituent (claim 5). While the amount of impurities claimed in claims 1-3 of the instant application are not directly taught in claim 5 of the copending

application, disclosed is 100% of the compound. Therefore there would be 0% of the impurities, which reads on the instant application.

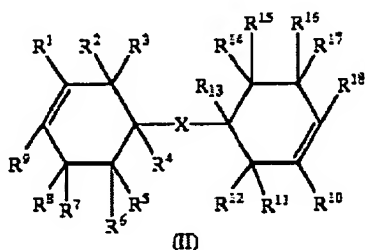
Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai (US 2003/0059618) in view of Boehme et al. (U.S. Pat. 4,849,532).

Regarding claims 1, 2, and 3: Takai '618 teaches a compound of the formula:



wherein X represents a divalent group selected from oxygen atom, a sulfur atom, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CH}_2-$, $-\text{C}(\text{CH}_3)_2-$, $-\text{CBr}_2-$, $-\text{C}(\text{CBr}_3)_2-$, and $\text{C}(\text{CF}_3)_2-$; R^1 to R^{18} each may be the same or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have substituent groups (para. 23 and 24).

Takai '618 teaches a process of producing a compounds in which an olefin of the

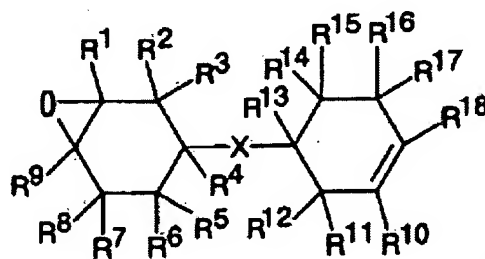


structure:

(para. 23) is epoxidized with aliphatic percarboxylic acid (para. 24) having substantially no water (para. 26), followed by removing the solvent (para. 58).

Not disclosed is then purifying by distillation. However, Boehme et al. teaches preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent (col. 1 lines 1-25), and then performing distillation (col. 4 lines 5-27). Takai '618 and Boehme et al. are combinable because they are both concerned with the same field of endeavor, namely preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine Takai '618 and Boehme et al. and would have been motivated to do so because distillation is a well known method of purification.

While Takai '618 does not state that the high molecular weight components with elution time shorter than the above compound or 5.5% or less, the impurities with a shorter retention time than the above compound are 19.5 % or less, and the reactive



intermediate of the compounds of the formula:

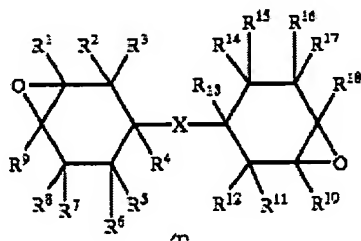
are

4.5% or less, since Takai '618 and Boehme et al. teach the process to make the compound according to the process disclosed in the instant written description, it is implicit that the composition would have these properties. As further evidence that this is the case, disclosed is that the purity is 93.4% (Takai para. 189), which indicates that all three of these added together can be no more than 6.6%. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support

applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is not teaching as to how to obtain a composition with these properties.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai (US 2003/0059618) in view of Boehme et al. (U.S. Pat. 4,849,532).

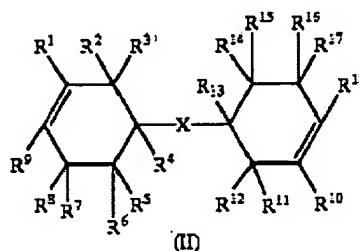
Regarding claims 7, 8, and 9: Takai '618 teaches a process of producing a



compound of

wherein X represents a divalent group

selected from oxygen atom, a sulfur atom, -SO-, -SO₂-, -CH₂-, -C(CH₃)₂-, -CBr₂-, -C(CBr₃)₂-, and C(CF₃)₂-; R¹ to R¹⁸ each may be the same or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have substituent groups



(II)

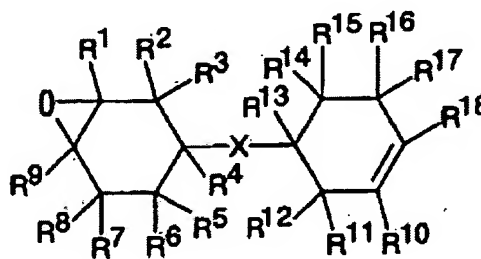
(para. 23 and 24), in which an olefin of the structure:

(para.

23) is epoxidized with aliphatic percarboxylic acid (para. 24) having substantially no water (para. 26), followed by removing the solvent (para. 58).

Not disclosed is then purifying by distillation. However, Boehme et al. teaches preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent (col. 1 lines 1-25), and then performing distillation (col. 4 lines 5-27). Takai '618 and Boehme et al. are combinable because they are both concerned with the same field of endeavor, namely preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine Takai '618 and Boehme et al. and would have been motivated to do so because distillation is a well known method of purification.

While Takai '618 does not state that the high molecular weight components with elution time shorter than the above compound or 5.5% or less, the impurities with a shorter retention time than the above compound are 19.5 % or less, and the reactive



intermediate of the compounds of the formula:

are

4.5% or less, since Takai '618 and Boehme et al. teach the process claimed, it is implicit that the composition would have these properties. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is not teaching as to how to obtain a composition with these properties.

Art Unit: 1796

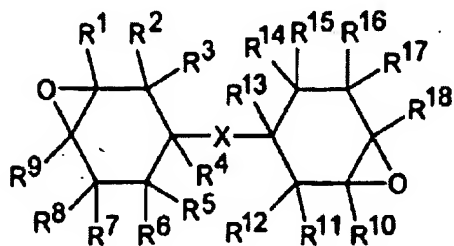
Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-5 of copending Application No. 11/792,982. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application claims



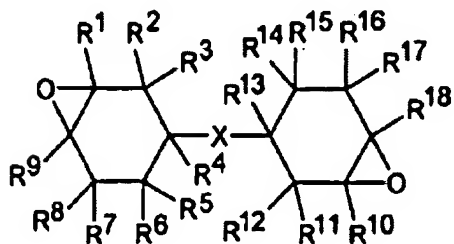
wherein X is a divalent group selected from the group consisting of an oxygen atom, a sulfur atom, -SO-, -SO₂-, -CH₂-, -C(CH₃)₂-, -CBr₂-, -

Art Unit: 1796

(CBr₃)₂, and -C(CF₃)₂-; R¹ to R¹⁸ each may be identical or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have a substituent, as does claim 1 of the copending application. Claim 1 of the instant application further claims the concentration of high-molecular-weight components having an elution time shorter than that of the alicyclic epoxy compound represented by the general formula (I) in detection by a gel permeation chromatography (hereinafter, GPC) is 5.5% or less with respect to the sum total of all of detected peak areas in terms of the peak area ratio per elution time, as does claim 3 of the copending application. Claim 2 of the instant application claims the same limitations as claim 4 of the copending application, and claim 3 of the instant application claims the same limitations as claim 5 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of copending Application No. 10/883,162. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application claims



wherein X is a divalent group selected from the group

Art Unit: 1796

consisting of an oxygen atom, a sulfur atom, -SO-, -SO₂-, -CH₂-, -C(CH₃)₂-, -CBr₂-, -CBr₃)₂, and -C(CF₃)₂-; R¹ to R¹⁸ each may be identical or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have a substituent, as does claim 5 of the copending application. While the amount of impurities claimed in claims 1-3 of the instant application are not directly taught in claim 5 of the copending application, disclosed is 100% of the compound. Therefore there would be 0% of the impurities, which reads on the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3 directed to an invention not patentably distinct from claim 1, 3-5 of commonly assigned 11/792,782. Specifically, the claims of the copending application read on the claims of the instant application as set forth above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11/792782, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were

commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan Arnberg whose telephone number is (571) 270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Art Unit: 1796

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Megan Arnberg *MA*
January 18, 2008


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

22152108